

whether any other area is now visited by birds which once came to Kutch.

Duck present another mystery. During the early years of the century, they always came to Kutch in fair numbers whenever the monsoon gave enough water for them. There were certain localities where a shoot could always be arranged in the assurance that good sport would be forthcoming. As an example, the shoots at Ningal and Ratnal may be given for the year 1922. In January of that year eight guns bagged 116 birds, in February six guns got 98 birds, in the following December eight guns bagged 213 birds. Devisar and Dhonsa too would usually provide their quota. Owing to the frequent monsoon failures with which Kutch is afflicted, there are always a number of blank years when no duck can be expected—for example 1923, 1926, and most of the years in the middle thirties. But when conditions were favourable, the ducks always came, whether in greater or lesser numbers. Of late years, when the assembly of experienced guns was more difficult, bags were naturally smaller; but when the water was there, the ducks were found in their accustomed spots. It has been noticed, however, during the last few years, that they have been coming in smaller numbers; and that even when the rains have been good, there have not been as many as used to be. The spots which were once favourites of theirs are now deserted by them; and this year, extraordinary to say, when Kutch is green, when the tanks and lakes are fuller than has been the case for many years, there are practically no duck at all. If the last monsoon had been a bad one, the absence of the duck would not be surprising; but the fact that none have come, even when conditions are favourable, taken along with the fact of the steady fall off in previous years, suggests that some definite change is taking place in the migration-pattern, which has influenced their arrival in Kutch for the last half century. In this connection the article *Ducks Unlimited* in the December 1956 number of the *Journal* is very suggestive. The trouble in Kutch is certainly not over-shooting; it must also, as in North America, lie with breeding grounds. Can it be that large scale developments in U.S.S.R. connected with land reclamation, or even with atomic weapons, have caused the shortage which we have noticed? Comparison with observations along similar lines to the above, gathered in other parts of India, might be interesting.

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January 30, 1957.

H. H. MADANSINHJI OF KUTCH

17. THE LIVER FLUKE OF THE FROG, *RANA TIGRINA*—  
A NEW RECORD OF *MEHRAORCHIS RANARUM*  
SRIVASTAVA, 1934 (PLEUROGENITINAE)

Srivastava (1934) reported a new trematode *Mehraorchis ranarum* encysted in the body cavity, specially in the pancreatic region of *Rana cyanophlyctis*. My colleague Dr. R. Rakshpal, to whom my thanks are due, pointed out a dissected *Rana tigrina* in the B.Sc. class, which

showed a large number of very small cysts attached to lungs, intestines, kidneys, etc. The cysts were examined and found to be only bacterial. The general examination of the various organs revealed infection of liver and gall bladder only. The liver showed white spots on its lobes, which gave these a pathogenic appearance. The liver had 16 liver flukes in its bile ducts. All the flukes were fully gravid. The gall bladder which was very much inflated was full of trematode eggs, which were later found to be of the flukes recovered from the liver. The flukes resembled *Mehraorchis ranarum* Srivastava, 1934. The general shape of the body and the topography of the various organs were as described by Srivastava (1934). The spines on the body were quite sharply distinguished and were projecting out of the surface very conspicuously, at least along the anterior end and the margins of the body. These were densely crowded at the genital opening. The uterine coils extended, in the majority of the specimens, beyond the intestinal caeca posteriorly and the caeca were more or less hidden under the coils all along their length. The vitellaria extended up to the levels of the anterior end of the pharynx and the posterior end of the ventral sucker. At least in their anterior region the vitellaria of the two sides continued in the middle of the body, even overlapping the oesophagus. The measurements of the various organs though different from those given by Srivastava (1934) were not taken into consideration as the flukes were found to be of the same type.

As no flukes have so far been recorded from the liver of frogs in India, I have called it the liver fluke of frog.

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December 29, 1956.

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#### REFERENCES

Srivastava, H. D. (1934): *Bull. Acad. Sc.*, U.P. 1934.

#### 18. TICKS FROM BALUCHISTAN, WEST PAKISTAN

During the Peabody Museum-Harvard Expedition to West Pakistan, 1955, some *Ixodoidea* were collected.

1. *Hyalomma excavatum*. A specimen was obtained by the writer at Little Kapoto, 10 miles south of Kalat.

2. *Hyalomma marginatum*. One specimen collected at Koh-e-Murid, 2 miles south of Turbat in Mekran, by Naem Beg Chughtai, University of Karachi Zoologist, from the bark of an acacia tree (*B. kahur*). This large tree is held sacred by the Zikris, a religious sect in Mekran.

The determinations were made by Dr. Harry Hoogstraai, U. S. Naval Medical Research Unit No. 3, in Cairo.

3551 MAIN HIGHWAY,  
COCONUT GROVE,  
FLORIDA, U.S.A.,  
November 14, 1956.

HENRY FIELD